

METHOD OF RADIATION TREATMENT FOR  
FLUOROPOLYMER MATERIALS

Abstract of the Disclosure

5 A source of radiation (10,12), particularly a  
pulsed accelerated electron beam, directs a beam of  
radiation through an irradiation chamber (14, 50). The  
irradiation chamber is depleted of oxygen and oxygen  
10 containing gases, such as being drawn to a vacuum of  $10^{-1}$   
or greater Torr by a vacuum pump (20, 52). Particulate  
fluoropolymer material is entrained (36) in substantially  
oxygen free gas and conveyed through the irradiation  
chamber. The accelerated electrons break chemical bonds  
15 in the fluoropolymer particles and electrostatically  
charge the particles. Magnetic fields (42, 60) of  
different polarity rotate the charged particles such that  
they are irradiated from different sides. The irradiated  
fluoropolymer particles are cooled (24) and separated (26)  
20 from the entraining gas. The entraining gas is  
recirculated through pneumatic line (34) for a continuous  
cycle. In an alternate batch processing embodiment, the  
fluoropolymer material is placed in the shallow container  
(50) which is sealed and evacuated. The container is  
conveyed through the pulsed electron beam.